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ABSTRACT

This paper describes a project for improving the reading and decoding skills of 23 high school students with reading learning disabilities. The targeted population consisted of high school students in a suburban community in the Midwest. The project used Auditory Discrimination in Depth, which is a multisensory program that develops auditory-perceptual skills basic to self-correction in speech, spelling, and reading. This program focuses on integrating sensory feedback from the eye, ear, and mouth to track the correspondence between the sound patterns of oral language and the alphabetical patterns of written language. The program was implemented for 18 weeks, 5 days a week, 55 minutes a day. Comparison of pre- and post-testing on the Kaufman Test of Educational Achievement (subtests reading decoding and reading comprehension) found an average growth in reading comprehension of 1.0 years in 18 weeks of instruction and in reading decoding, a growth of approximately 6.5 months. Improved attitudes toward reading were also observed. Individual sections of the report explain the problem and school context, analyze possible causes, review the literature, detail the action plan, and report on methods of assessment and project results. Appendices include a participation consent form, pretest and posttest reading scores, and an action research journal form. (Contains 28 references.) (DB)

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IMPROVING READING AND DECODING SKILLS THROUGH THE USE OF MULTISENSORY TEACHING STRATEGIES

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I would like to dedicate this paper to several people whom without their support and expertise this project would not have been possible. First and foremost my husband Kevin whose support emotionally and technologically was never-ending. Next, my three beautiful children Ian, Connor, and Erin who spent every Thursday night for the last two years without their mom and constantly questioned when I would be finished working on the computer. To my wonderful friend and colleague Gina who so graciously and generously gave of her time for the implementation portion of this project not to mention her ear for me to bend. To my department secretary and friend Glorianne for her professional expertise and encouragement. Finally, to my students who literally made this all possible.

ABSTRACT

This report describes a program for improving reading and decoding skills. The targeted population consisted of high school Learning Disability students in a suburban community in the Midwest. The problems of poor reading and decoding skills were documented through data collected revealing the test results of these students on routine standardized testing.

Analysis of probable cause data revealed that students exhibit a variety of cognitive deficits including problems with phonological awareness, disabilities linked to genetics, dyslexia, difficulty distinguishing between phonemes, proficiency problems, mastering relationships between letters and sounds, and a general lack of understanding of word structure. They do not learn to read, write and spell naturally. Some students may be "Curriculum disabled" or perhaps just lack the practice necessary to become proficient readers.

A review of solution strategies suggested by knowledgeable others combined with an analysis of the problem setting resulted in the selection of the Auditory Discrimination in Depth program to be implemented.

Post intervention data indicated an increase in reading and decoding skills, as well as, in student attitudes toward reading in general.

TABLE OF CONTENTS

CHAPTER 1 – PROBLEM STATEMENT AND CONTENT 1

General Statement of the Problem 1

Immediate Problem Context 1

The Surrounding Community 2

National Context of the Problem 4

CHAPTER 2 – PROBLEM DOCUMENTATION 7

Problem Evidence 7

Probable Causes – Site Analysis 11

Probable Cause – Literature Review 11

CHAPTER 3 – SOLUTIONS 15

Literature Review 15

Project Objective 21

Process Statements 22

Project Action Plan 22

Methods of Assessment 27

CHAPTER 4 – PROJECT RESULTS 28

Historical Description of the Intervention 28

Presentation and Analysis of Results 29

Conclusions and Recommendations 32

REFERENCES 35

Appendix A

Consent to Participate in Data Collection 37

Appendix B
Raw Data – Pretest Scores 38

Appendix C
Raw Data – Posttest Scores 39

Appendix D
Action Research Journal 40

CHAPTER 1

PROBLEM STATEMENT AND CONTEXT

General Statement of the Problem

The students of the targeted high school Learning Disability (LD) classes exhibit poor reading and decoding skills. Evidence for the existence of this problem include oral reading, teacher observation, teacher anecdotal records, and results from standardized testing.

Immediate Problem Context

The high school serves students grades 9 through 12; the school is unique in the fact that it is the only school in the district. The school is located in a suburban community 13 miles west of a large metropolitan area in the Midwest. Total school enrollment is at 1,392 from a variety of racial/ethnic backgrounds; the predominant group is White at 61.6% followed by 30.1% Hispanic as displayed in Table 1. Attendance is at 93.4% and student mobility is at 8.9%. Operating expenditure per pupil is $10,698. The high school has a staff of 88 teachers, made up of 98.9% White and 1.1% Hispanic. The staff is 47.6% male and 52.4% female. Average teaching experience is 16 years; roughly two-thirds of the staff hold master's degrees and above (School Report Card, 1996).

The school offers advanced placement opportunities in several curriculum areas. The school serves 9.6% of students with special education services. Special education services include one Multi- Needs classroom staffed with one full time certified teacher and three full

time teacher aides. The building has two self-contained Behavior/Emotional disorder classes serving 20 students in various subject areas; they use the Boys Town Model to teach appropriate social skills. They have two full- time certified teachers and three full time teacher aides. The bulk of the special education students receive services through the Learning Disabilities and Behavior/Emotional Disorder resource classes; there are approximately 35 sections of courses providing services. The resource classes are taught by eight special education certified teachers.

The department also runs a resource room for students to use during assigned study periods or from other outside classes, and it is open from 7:00 a.m. until 3:30 p.m. The department has one full time certified coordinator, secretary, social- worker and school psychologist. The school offers general education, college preparation courses as well as many advanced placement opportunities to students. As part of the school's strategic plan, the school is developing life long learning standards for students. These standards are based on critical thinking skills, communication and problem solving.

Table 1

Racial/Ethnic Background and Total Enrollment

Category	White	Black	Hispanic	Asian/P. Islander	Native American	Total Enrollment
School	61.6%	1.1%	30.1%	7.0%	0.1%	1,392
State	64.0%	20.6%	12.2%	3.1%	0.1%	1,906,599

The Surrounding Community

The school district serves 1,392 students from two different communities west of a large metropolitan area. The district services students from two feeder elementary districts within the two communities as well as private elementary schools located within its boundaries. The ethnic makeup of the two communities is as follows: White, Hispanic, Asian/P. Islander, Black, and

Native American. The school is considered medium in size by Illinois standards with enrollment between 268-1682. The average class size is 19.2. The high school graduation rate is at 83.9%. Low-Income, Limited-English-Proficient Students and Dropouts make up almost 22% of the total school population, the largest group being Low-Income at 11% (see Table 2) (School Report Card, 1996). The pupil teacher ratio is 17.4:1 and administrator pupil ratio is 154.7:1. The average teacher salary is $60,624, and the district employs seven administrators with an average salary of $90,302 (School Report Card, 1996). The two communities in which the district serves have a population of 17,676 (Community A) and 12,250 (Community B) (Kopriva, 1997, p. 5).

Table 2

Low-Income, Limited-English-Proficient Students and Dropouts

Category	Low-Income	Limited-English-Proficient	Dropouts
School	11.0%	6.5%	4.0%
State	34.9%	5.9%	6.5%

The district has a community relation coordinator who is in charge of writing several publications and mailings that highlight the achievements of its students as well as the school and district news. The district has recently formed an alumni association in order to communicate more clearly with its graduates. The school also has a student diplomat program in an effort to take students to community meetings to speak about their experiences at the high school.

Within these communities, the median family income as reported in The Business Ledger is $36,649 for Community A and $55,731 for Community B. The number of households reported is 7,697 and 5,514 respectfully. The number of families living in the communities is

5,264 for Community A and 4,314 in Community B. The median age for both communities is 31.8 and 32.4 (Kopriva, 1997, p. 5). The average home value is $143,729 in Community A and $169,381 in Community B (Kopriva, 1997, p. 21). The top three area's of employment by industry categories are as follows: Manufacturing, transportation, and wholesale trade, (see Table 3) (Kopriva, 1997, p.14).

Table 3

Number of Individuals Employed by each Industry Category

Category	Community A	Community B
Manufacturing	7,429	3,164
Transportation	3,409	1,216
Wholesale trade	3,735	3,659

National Context of the Problem

The State Board of Education established performance standards for reading. The state set three levels for reporting results for the goals assessment program. They are as follows: Level One (do not meet state goals for learning); Level Two (meet state goals); Level Three (exceed state goals). The state reported that on average, 35% of the students are at Level One or do not meet state goals for learning in the area of reading (School Report Card, 1996).

According to Aaron (1995),

> The existence of children with average or above-average intelligence but experiencing difficulty in recognizing written words has been reported since the end of the last century. These children have been traditionally described as having developmental dyslexia or specific reading disability. (p. 346)

Nosek (1995) states two English physicians, Kerr and Morgan, who called it "word blindness" (p. 6), first recognized dyslexia as a learning disability in 1896. McGlannon (as cited in Nosek, 1995) stated:

> It would be difficult, if not impossible, to find any other disability affecting an estimated six million children in the United States today on which so much research has been done, so many thousands of articles written, and yet concerning which so very little information has reached the average teacher or pediatrician, to say nothing of parents and public. These children are as handicapped by the ignorance surrounding their problems as they are of the problem itself.
>
> How many people are dyslexic? The National Center for Educational Statistics reports five to fifteen percent of school children are dyslexic. The U.S. Department of Health Education and Welfare sets the figure at 15% of the total population. OSERS, The Office of Special Education and Rehabilitative Services, reports one out of every seven people in the U.S. is dyslexic. Professionals who work in the field say the actual figure is closer to 20% of the total population. For the sake of compromise, I will use a median figure of 10%. So, statistically, we can say there are approximately 25 million dyslexics in the United States. (p. 5)

A policy statement from the American Academy of Pediatrics, the American Academy of Ophthalmology, and the American Association for Pediatric Ophthalmology and Strabismus in 1984 (as cited in Nosek, 1995) supports the position that a child or adult with dyslexia or a related learning disability receive early medical, educational, and/or psychological evaluation and diagnosis, and remediation with educational procedures of proven value, demonstrated by valid research.

A summary of the conclusions endorsed by the three professional groups include:

1. Learning disabilities, including the dyslexics...may require a multidisciplinary approach from medicine, education, and psychology in evaluation, diagnosis, and treatment.
2. Eye care should never be instituted in isolation when a person does have dyslexia...
3. The teaching of dyslexic and learning-disabled children is a problem for all educational science.
4. [We]...strongly support the early diagnosis and appropriate treatment of persons with dyslexia and related learning disabilities (Nosek, 1995, p. 9).

To summarize, 35% of all school age children in this state do not meet the state goals for reading. Developmental dyslexia or specific reading disabilities have been reported since the end of the last century, and it effects an estimated 6 million children, yet little information is reaching pediatricians, teachers, parents of these children or the public. Twenty percent of the total population is effected by a reading disability. Early evaluation, diagnosis, and remediation with educational procedures of proven value are critical.

CHAPTER 2

PROBLEM DOCUMENTATION

Problem Evidence

To show evidence of the problem, that students of the high school LD classes exhibit poor reading and decoding skills, the researcher sent home a letter requesting parental permission (Appendix A) to use student test scores in a research project, then students test results from spring 1997 Kaufman Test of Educational Achievement were collected (Appendix B). The spring testing results are used to document growth over the past year, as well as, to document eligibility for LD services. During the first week of school students were also administered the Lindamood Auditory Conceptualization test (LAC) individually; LAC test results were then collected. This test assessed the ability to perceive and conceptualize sound units and the changes in their number and relationship in spoken syllables and words (Lindamood & Lindamood, 1979). All of the students involved in this research project meet the eligibility requirements to receive LD services. The LAC test further documented that these students were predisposed to needing more direct instruction in the area of auditory-perceptual skills (Lindamood & Lindamood, 1969). Finally the targeted students were asked to orally read a passage.

Students in the targeted classes were given the Kaufman Test of Educational Achievement Subtest Two: Reading Decoding and Subtest Four: Reading Comprehension as part

of their routine annual review testing in the spring of 1997. The decoding section requires each student to read a list of words to the examiner, and the examiner checks for correct pronunciation of each word and note any incorrect responses. The score was then converted using standards to grade level scores. The decoding scores ranged from 1.6 to 9.2 grade equivalents. Most scores fell within four years or more below grade level. The comprehension section asks students to read material and answer questions according to their understanding of the passage given. Again, the test scores were converted using standards to grade level equivalents. Scores in the area of comprehension ranged from 1.8 to 8.3 grade equivalents. Most scores fell within three years or more below grade level (See Figure 1).

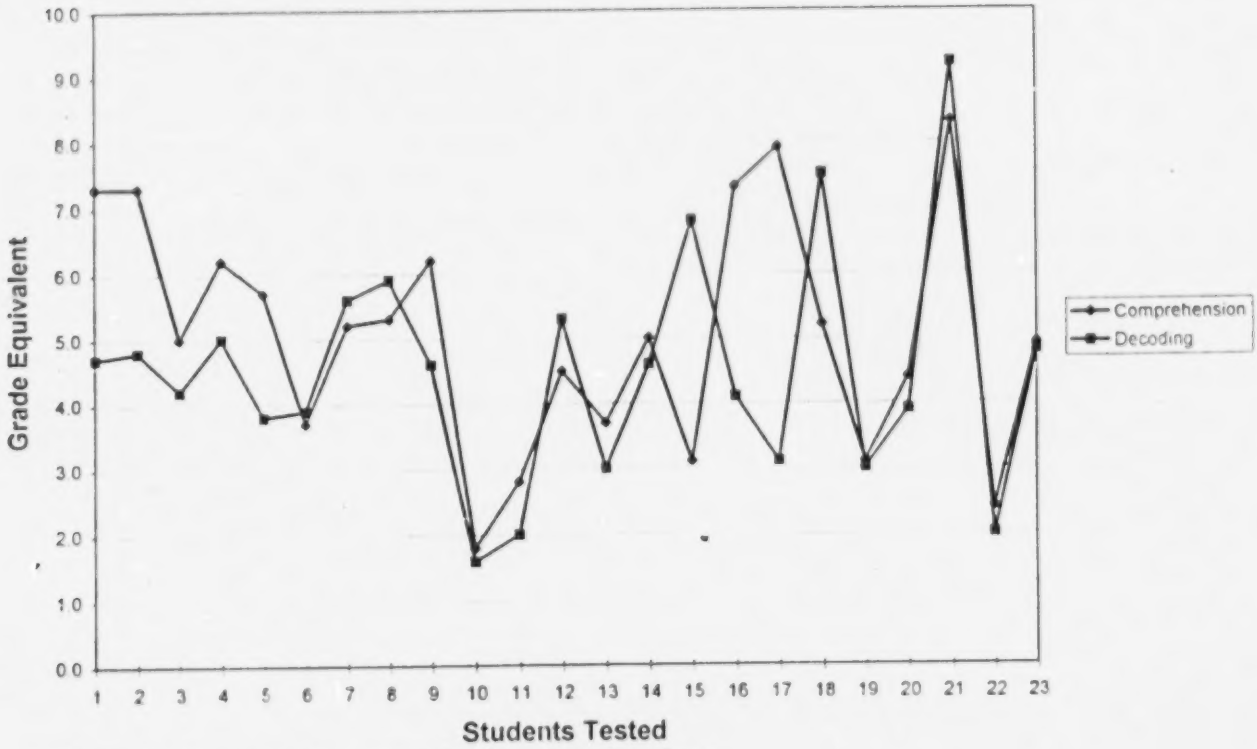

Figure 1. Pretest reading scores for the targeted students.

The LAC test was broken down into two categories. The first category tests for recognizing the number of individual sounds the examiner gives. The student represents the

number of sounds as well as sameness or difference with colored blocks. The second category is a chaining activity where the student is given a simple syllable pattern and asked to represent each sound they hear with colored blocks, and then they are asked to make changes within their blocks where they hear the examiner make changes. The LAC test gives a guideline to follow for recommended minimum scores; ages 7th grade to adult should score ninety-nine. The targeted students scored between 31 (first half year of Kindergarten) to 100 (Adult). Most of the scores fell within the first, second, or third grade level (See Figure 2). A summary of all pretest reading scores is presented in Table 4.

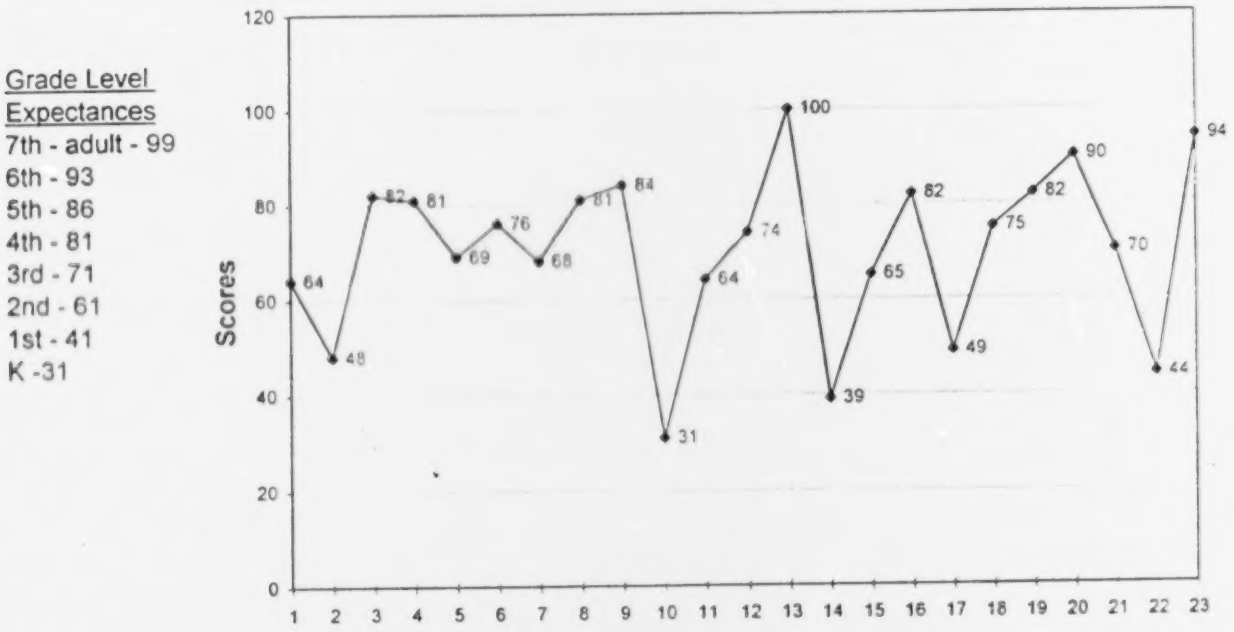

Figure 2. LAC test pretest scores for targeted students.

In summary, the performance of the students on the LAC test shows a lack of ability to perceive and conceptualize sound units and the changes in their numbers and relationship in

spoken words. The pretest results on the Kaufman Test of Educational Achievement also showed below grade level performance for all students showing evidence of the problem.

Table 4

Pretest Reading Scores

Student	Comprehension	Decoding	Total Reading	LAC test
1	7.3	4.7	6.0	64
2	7.3	4.8	6.0	48
3	5.0	4.2	5.4	82
4	6.2	5.0	5.6	81
5	5.7	3.8	4.3	69
6	3.7	3.9	3.8	76
7	5.2	5.6	5.4	68
8	5.3	5.9	5.6	81
9	6.2	4.6	5.4	84
10	1.8	1.6	1.7	31
11	2.8	2.0	2.9	64
12	4.5	5.3	4.9	74
13	3.7	3.0	3.3	100
14	5.0	4.6	4.3	39
15	3.1	6.8	4.9	65
16	7.3	4.1	5.7	82
17	7.9	3.1	5.5	49
18	5.2	7.5	6.5	75
19	3.1	3.0	3.1	82
20	4.4	3.9	3.7	90
21	8.3	9.2	8.7	70
22	2.4	2.0	2.2	44
23	4.9	4.8	4.9	94

Finally, during the first week of school the targeted students were asked to read orally paragraphs at the fifth and sixth grade reading level. It was noted through teacher observation and anecdotal teacher notes taken during this time that students had great difficulty decoding the necessary words to read and understand the paragraphs. Many of the students became easily frustrated and asked to not participate. Comments such as "This is stupid, I hate reading, I never read, I can't read this, and why do we have to take this class" were noted. The researcher noted

that the targeted students did not seem to be using any strategies to decode the printed word. Many of the targeted students seemed to be just guessing at each and every word. This strategy of randomly guessing also illustrates the evidence of the problem. Next, probable causes at the site will be discussed.

Probable Causes - Site Analysis

In order to document the probable cause of student failure to achieve reading scores at or above grade level, first the researcher collected data from spring annual review testing as required by law; secondly the researcher administered the Lindamood Auditory Conceptualization test (LAC).

The annual review testing results are used to document eligibility for LD services. The results must show a discrepancy between performance ability and current achievement. All of the students involved in this research project meet the eligibility requirements to receive LD services. The LAC test further documented that these students were predisposed to needing more direct instruction in the area of auditory-perceptual skills (Lindamood & Lindamood, 1969). Finally the researcher observed students reading orally and took anecdotal notes on the students performance. Performance reported in all three areas showed that students' poor reading and decoding skills is a significant problem. Next, a review of current literature on the topic will be discussed.

Probable Cause - Literature Review

An investigation of current literature suggests that student's poor reading and decoding skills may have several causes. The causes being addressed here are divided into two categories: cognitive and those relating to the learning environment.

Cognitive

First among these causes is that LD students exhibit a variety of cognitive deficits including problems with phonological awareness, attention, sequencing, and visuoperceptual skills (Wolfe, 1996). The Russian neuropsychologist Alexander Luria (as cited in Wolfe, 1996) discovered that lesions of the left frontal and frontotemporal divisions of the cerebral cortex are associated with problems in the phonetic analysis and synthesis involved with reading.

The National Institute of Child Health and Human Development has spent 10 years and nearly $30 million trying to decipher the underlying features of learning disabilities. Reid Lyon (as cited in Roush, 1995) and other researchers say that they have traced aspects of the condition such as a deficit in "phonological awareness", or the ability to decode words into individual sound units to the level of the neuron and even to the gene. The researchers have begun to demonstrate that in poor readers, anatomical structures and activity levels in areas of the brain, are believed to be related to phonological processing and show subtle abnormalities. Such abnormalities may appear in 20% of the nations school children (Roush, 1995).

According to the Orton Dyslexia Society (1996),

> Students identified as dyslexic make up about 80% of the LD population. The word 'dyslexia' comes from two Greek roots- 'dys', meaning poor or inadequate and 'lexia', meaning verbal language. Hence the literal definition: poor or inadequate language. Dyslexia is not a disease to have and to cure. Rather it describes a kind of mind - often a gifted and productive mind - one that learns differently. As many as one in ten people may be considered dyslexic. For them learning language by conventional means can be frustrating. (Brochure)

Children who lag behind in language or reading skills have trouble distinguishing between certain spoken syllables known as phonemes. Research has shown that in at least some of these children the brains auditory system simply doesn't recognize the syllables as different (Barinaga, 1996).

Cognitive causes include lesions in the cerebral cortex that are associated with phonetic analysis and synthesis involved with reading. The National Institute of Child Health and Human Services (as cited in Roush, 1995) have described the problem as a deficit in phonological awareness, and the brain structure of these individuals shows subtle abnormalities. The research has shown that in at least some of the students the brains auditory system doesn't recognize syllables as different leading to great difficulty in the area of reading. In addition to the cognitive, the second group of causes is related to the learning environment.

Learning Environment

The second group of causes is related to the learning environment. One cause for poor reading and decoding skills is that certain students with serious reading disabilities are not proficient in the use of phonics and sound blending. One common method of dealing with this problem is for teachers to decide not to teach such students phonics skills because it is not an area of strength (Idol & Rutledge, 1993). Many students have yet to master the most basic relationships between letters and sounds that learning to read entails (Curtis & Chmelka, 1994). Reading disabled students lack an understanding of word structure. They have difficulty recognizing vowels, consonant blends, consonant and vowel digraphs, syllables, prefixes, suffixes, and roots within words. Often these patterns are never presented to students, and not all children pick them up on their own. However, some children do not learn to read, write and spell naturally, and they need explicit instruction (Henry, 1994).

Lack of reading practice is a major cause of low reading standards (Topping, 1996). Reading is a skill. The more one does it, the better one becomes. The better one becomes, the less effort it takes. The less effort it takes, the more one can do - and the more one wants to do. Unfortunately this positive spiral also operates in reverse. For the weaker reader, it is a vicious circle. This is then compounded by avoidance on the part of the student (Topping, 1996). Finally, some educators argue that children who have difficulty learning are "curriculum disabled" by teaching strategies that promote vague goals like self-esteem over traditional skills (Staples, 1997).

At the site studied, all of the probable causes come into play at one point or another due to the nature of working with LD students. Students at the site tested out with severe deficits in decoding skills, and many students are performing at least five or more grade levels below their current grade. A majority of the students tested below the third grade level on the auditory conceptualization test. The low score indicates the lack of ability to perceive and conceptualize sound units and the changes in their number and relationship in spoken syllables and words; these skills are the basic skills needed in order to be a successful and proficient reader.

In summary, the general causes of poor reading and decoding skills involve cognitive and learning environment issues. Cognitive causes include looking at activity levels in areas of the brain, linking difficulties with genetics, considering dyslexia, distinguishing between phonemes, and lacking phonics skills. Cognitive causes might also include showing no mastery with relationships between letters and sounds, and a general lack of understanding of word structure. Learning environment issues include curriculum disabled and a general lack of practice. Next, solutions will be discussed.

CHAPTER 3

SOLUTIONS

Literature Review

A review of the current literature indicates that teachers can improve students reading and decoding skills through instruction. Several solutions were considered including intensive phonics instruction, hearing and feeling methods, meeting individual learning styles, and the Auditory Discrimination in Depth program.

Phonics Instruction

One suggestion offered by the National Institute of Child Health and Human Development (as cited in Roush, 1995) is to replace current context-based reading instruction with "highly structured, explicit, and intensive instruction in phonics rules and their application to print" (Roush, 1995, p. 1896). The various methods of phonics instruction to be discussed here include: Sound sheets, Phonological awareness, The Laubach way to reading, Task-Analytic approach, Char-L intensive phonics, and TWI .

Sound sheets. Sound sheets are a method of direct teaching of sounds to poor readers whereby sound/letter combinations are taken directly from the text the student will be reading after practicing the sounds. The sound sheet is an excellent approach because sound practice does not occur in isolation. It is immediately followed by an opportunity for the student to read the same sounds in words embedded in the text with emphasis placed on reading for

understanding (Idol & Rutledge, 1993). Similarly, the next approach teaches sound practice, however, it is using isolated words.

Phonological awareness. The literature also states that teachers need to teach phonological awareness, beginning with demonstrating the relationship of parts to wholes. Then teachers need to model and demonstrate how to segment short sentences into individual words, showing how the sentence is made up of words. Students use chips or other manipulatives to represent the number of words in the sentence. Once the students understand part- whole relationships at the sentence level, students move on to word level, introducing multisyllable words for segmentation into syllables. Finally, the teacher moves to phoneme tasks by modeling a specific sound and asking the students to produce that sound both in isolation and in a variety of words and syllables (Beginning, 1996). The next method discussed is a combination of the first two approaches.

The Laubach way to reading. The Laubach Way to Reading (Laubach, Kirk, & Laubach, 1981), is one instructional program that secondary level teachers have turned to in their work with adolescent beginning readers. This program was originally developed for adults with limited reading skills; it is one of the most widely used adult literacy programs (Curtis, 1994). Because of its use with adults, this makes it very attractive to use with adolescents, who often resent being taught with elementary materials. The Laubach program consists of a set of four structured workbooks. All the lessons in the program follow a similar format. The teacher begins by showing the student a chart that presents the letter-sound correspondences that will be the focus of the lesson. Then, students read a story that provides them the opportunities to read words in context that incorporate the principles of word analysis being taught. Next, students complete exercises that give additional practice on phonics and word recognition skills (Curtis &

Chmelka, 1994). The fourth approach is similar in that it gives a strategy then it transfers the skill to text.

Task-analytic approach. Research also offers a task-analytic approach, breaking down phonics instruction into ten generalizations. Direct instruction is used to show students how to apply the generalizations on a sounding chart that offers clues to the sounds represented by the letter patterns. Flashcards are used to practice application of each generalization, followed by transfer of skills to text (Dana, 1991). Again, the next approach uses a similar format.

Char-L intensive phonics program. Char-L Intensive Phonics Program is a series of lessons based primarily on the alphabet, the five phonetic rules and a two-step decoding system (Cobb, Bonds, Peach, & Kennedy, 1990). This program appears useful for students having difficulty in reading and spelling, for a student who is a beginner, or for adults who wish to improve their reading skills (Cobb, 1990). The next approach differs from those previously discussed in that it promotes a three step approach to reading.

TWI. The Institute for Academic Excellence, Inc. offers another solution called TWI, which is an acronym for, read to, read with, and read independently (Paul, 1996). The institute created a program of classroom-proven strategies to establish 60 minutes of in- school reading practice time that in turn will raise students reading scores (Paul, 1996). Under the TWI concept of reading practice, beginning readers are read books aloud (the 'read to' stage). As students progress, there is an interactive one-on-one assisted reading stage where a student works with an adult or more experienced reader. This may be unstructured and informal, or it might include a highly structured approach. All students go through this assisted reading stage. This is the 'read with' stage. Finally, there is the independent reading stage, where students read books silently on their own (Paul, 1996).

In short, there are many different approaches to teaching phonics available to teachers. Sound sheets, Phonological Awareness, the Laubach Way to Reading, Task- Analytic Approach, Char-L intensive phonics, as well as, the Institute for Academic Excellence TWI approach were discussed. Another area to explore is hearing and feeling techniques.

Hearing and Feeling

The Orton-Gillingham teaching technique, which emphasizes learning through other means such as hearing and feeling, is another option to improve reading and decoding skills (Walters, 1994). This approach uses structured, sequential, systematic, multisensory teaching to help students discover the structure of the English language (Illinois Branch of the Orton Dyslexic Society, 1996). Orton (1966) emphasized the importance of the retraining of a child with a reading disability. The retraining usually starts with the teaching of the basic language units (individual letters and phonemes), clarifying the visual and the auditory patterns, and strengthening their linkage by introducing the motor elements of speech and writing at the same time. By carefully following a step-by-step progression, the pupil is prepared for the longer units, the more complicated letter-sound patterns, sequences of two or more syllables, and words in phrases and sentences. When he has thoroughly mastered these cumulative skills, he will be able to recognize many words almost at sight with full awareness of their meaning- he will, in fact, have learned how to read (Orton, 1966). Another area to investigate is learning styles.

Learning Styles

Research states that every student has a special style for reading. Students learn to read more easily and enjoy it more when instructional techniques match their styles. Carbo, Dunn, & Dunn (1986) have developed a Reading Style Inventory to identify students' learning styles during the act of reading. They states that educators are to use this information to create reading

programs to accommodate the students strengths while compensating for any weaknesses (Carbo, Dunn, & Dunn, 1986). They also recommend the use of colored overlays to minimize visual problems (Irlen, 1991). Research has demonstrated that poor achieving students improve their reading skills and their overall grades much more effectively when their learning styles are met (Carbo, Dunn & Dunn, 1986). Three strategies are offered to help teachers accommodate the learning styles of poor readers: language experience, mapping, and recorded books.

Language experience. With young students, Carbo, Dunn and Dunn (1986) have found the language experience method quite successful. Students and teacher first discuss an event, an experience, or perhaps a picture. The teacher then draws from the students a few simple sentences about the event, experience, or picture and writes them on the board or chart. After each sentence is written, the teacher moves her hand under it and reads it aloud. Then students are invited to read the sentence aloud. At the end of the description or story, the teacher and student read it aloud in its entirety and the student copies it into his/her notebook. This method helps students remember what they have written because they have experienced it, and it also allows students to remember what they have read because they were active participants in the process. The next approach is similar in that it also has the student writing things down and being an active participant.

Mapping. The primary purpose of mapping is to demonstrate relationships. It can be used to teach vocabulary or concepts. The steps for developing a map are: (a) Identify the main idea of the passage, (b) Write it down and circle it, (c) Identify secondary categories, (d) Connect these secondary categories to the main idea, (e) Identify supporting details, and (f) Connect each supporting detail to the category it supports (Richardson & Morgan, 1994). The next approach is

different from the last two in that it does not rely at all on the student writing things down for later review.

Recorded books. The last strategy that helps some students is recorded books (Carbo, Dunn & Dunn, 1986). The idea is that for poor readers there is a significant time lag between when they see and say a word. Their reading is slow and laborious. As a result, it becomes difficult to recall what a passage is about. With recorded books, the students are able to see and hear the words simultaneously as they follow in the book and listen. The recording does for the student what he/she is not yet able to do: verbalize the printed words with proper pace, phrasing and expression. After listening and following along once, twice, or even several times, the student tries to read the portion aloud fluently. These recordings or book tapes also further the development of good sight word vocabulary and increase self-confidence in one's ability to read

Identifying a student's learning style can be very useful in setting up strategies to help them in their reading. The three strategies offered were language experience, mapping, and the use of recorded books. Last, the Auditory Discrimination in Depth program will be explored

Auditory Discrimination

One last solution is to teach the Auditory Discrimination in Depth program (A.D.D.)(Lindamood & Lindamood, 1979). It is a multisensory program that develops the auditory-perceptual skills basic to self-correction in speech, spelling, and reading. The A.D.D. program focuses on integrating sensory feedback from the eye, ear, and mouth to track the correspondence between the sound patterns of oral language and the alphabetical patterns of written language. Through the means of questions and labels, the program increases the ability to identify and classify speech sounds, progressing from isolated sounds, to sequences of sounds in nonsense syllables, to real words (Lindamood & Lindamood, 1979).

What makes this program different from the rest is that it provides experience at a level prior to that which most phonics or reading programs typically begin. The student is led gradually through a series of small steps toward the final goal of competency in reading and spelling tasks. Through discovery and manipulative activities, the program develops the student's ability to: (a) discriminate likenesses and differences between individual speech sounds, (b) perceive and represent the sameness or difference, number, and order of speech sounds, both in sequences of isolated sounds and in syllable units, (c) perceive minimal changes within and between syllable units as one syllable is maintained and compared with another, (d) associate speech sounds with the alphabet symbols that represent them, (e) use these sound-symbol associations to spell (encode) sequences of sounds in spoken syllables into corresponding written symbols, and read (decode) sequences of written symbols into their corresponding spoken syllables, (f) generalize these encoding and decoding skills to real words, including multisyllable words, and apply these skills in reading and spelling.

In summary, the solutions offer many strategies including intensive phonics instruction, and using methods such as hearing and feeling, meeting individual learning styles, and the Auditory Discrimination in Depth program, which will be used in this project.

Project Objective

As a result of using the Auditory Discrimination in Depth program, during the period August 27, 1997 to January 15, 1998, the students of the high school learning disability classes will increase their reading and decoding skills, as measured by the Kaufman Test of Educational Achievement Subtest Two: Reading Decoding and Subtest Four: Reading Comprehension.

Process Statements

In order to begin using the Auditory Discrimination in Depth program (A.D.D.) it is first necessary to set the climate for learning. This involves two parts: The thinking process and selective listening. The purpose of the thinking process is to help students gain an understanding of the learning process and the importance of their active involvement in it. Selective listening is to create interest in and curiosity about sounds; to develop an awareness of the ear as a monitor of sounds; to help the students learn to listen selectively; and to develop their ability to make judgments about sounds. (Lindamood & Lindamood, 1975)

Project Action Plan

Week One:

- Administer Lindamood Auditory Conceptualization Test (LAC test)
- Explain the thinking process
- Selective Listening Activities: Identifying and describing environmental sounds, focus-field shifts, monitoring function of the ear, associating sounds with their sources, determining the distance and direction of sounds, comparing sounds, sound sequences and tracking sound sequences.

Week Two:

- Consonant pairs and their labels
- Basic mouth movements
- Voiced and unvoiced sounds (quiet and noisy brothers)
- Labels: lip poppers, tip tappers, scrapers, lip coolers, tongue coolers, skinny sounds, fat sounds, fat-pushed sounds
- Letter symbols

- Student activities: Matching mouth form pictures with consonant pairs, associating sounds, labels and mouth form pictures- given one element student provides other two elements, simple stimulus response, sound bee, deleting right and wrong associations and card games.

Week Three:

- Other consonant groups
- Labels: nose sounds, windy sounds, lifters and borrowers
- Check dialogue
- Bingo
- Begin vowel circle: smile, open, round, sliders and vowel +r
- vowel sounds
- vowel symbols

Week Four:

- Continue vowel circle
- Match circle symbols and pictures
- Sound label association
- Check out activity: Without letter symbols have the student lay out the vowel mat, using the colored squares, and position the mouth form pictures in the appropriate areas of the circle. Given one part the student then must supply the remaining two. (Given the sound, the student must be able to supply the label and the area of the circle, and indicate the picture) Repeat this activity with letter symbols.
- Reinforcing activities
- Begin tracking speech sounds: color encoding isolated sounds, use colored blocks to represent speech sounds

- Label sounds in patterns

Week Five:

- Keep a daily log of practice patterns used indicating success or difficulty
- Integrate feedback from the eye, ear and mouth to develop cross-checking system so that the students can verify and self-correct their own responses
- Practice activity: Give encoding experiences in judging isolated sounds in sequences of two and three sounds. Use colored blocks for encoding.
- Check out activity: Say sequences of isolated sounds, and have the students place colored blocks to represent each sequence. Check students individually.
- Reinforcing activities: Gross-motor involvement- students become the colored blocks and position themselves to represent sequences of sounds.
- Encoding additions, substitutions, repetitions, omissions, and shifts of sounds within simple syllables. VC, CV, CVC

Week Six:

- Introduce chaining activity
- Practice activities: comparing two patterns and perceiving how syllables change.
- Check out activities: Have student encode changes in syllable patterns as you say the patterns. Direct the student to label and describe the changes changing. If he or she is able to encode two chains with virtually 100% accuracy move on.
- Reinforcing activity: Gross motor
- Simple syllable chains

Weeks Seven and Eight:

- Simple syllable chains

- Complex syllables
- Review need for multisensory feedback and structure of simple syllables
- Code the structure with pictures and blocks
- Compare patterns in a chain to identify five auditory contrasts: VCC, CCV, CVCC, CCVC, and CCVCC.
- Practice activity: Present chains of complex syllables for students to encode using colored blocks.
- Check out activity: Individually check student's ability to encode chains of changes in complex syllables.
- Reinforcing activity: Have competent students work individually with those students who need more help.

Weeks Nine and Ten:

- Complex-Syllable chains
- Wide, finer and finest contrast
- Overlap to reading
- Word lists

Weeks Eleven and Twelve:

- One syllable encoding student activities
- Simple syllables
- Complex syllables
- Words
- Reinforcing activities: Student generated chains
- Spelling patterns and words

Weeks Thirteen and Fourteen:

- Multisyllable Encoding
- Work at oral level listening for syllables, conceptualize the syllables, count on fingers
- Listen for accent or stress
- Colored blocks
- Manipulating syllables on cards
- Write two syllable patterns

Weeks Fifteen and Sixteen:

- Continue to present additional concepts regarding encoding
- Irregularly spelled ending syllables
- Open syllables/long vowels
- Double consonant/ short vowels
- Plural noun
- Past tense verb forms
- Read two syllable patterns

Weeks Seventeen and Eighteen:

- Three syllable patterns
- Write syllable
- Student activities: Counting the number of syllables in a pattern, indicating accent or stress, manipulating two- syllable patterns, writing two -syllable patterns.
- Read
- Begin re-testing for data collection

Methods of Assessment

The methods used to assess the effects of using the Auditory Discrimination in Depth program are the Kaufman Test of Educational Achievement Subtest Two: Reading Decoding and Subtest Four: Reading Comprehension, which was used as a pretest, a posttest score on the Lindamood Auditory Conceptualization Test, as well as teacher observation and anecdotal teacher notes.

CHAPTER 4

PROJECT RESULTS

Historical Description of the Intervention

The objective of this project was to increase reading and decoding skills of the targeted high school L.D. students. The implementation of multisensory teaching strategies was used to improve reading and decoding skills.

The intervention began with a pretest using the LAC test to get a point to reference from. Then the A.D.D. program was explained to the students. Consonant pairs and their labels were introduced and matched with mouth forms. The idea of voiced and unvoiced sounds was explained and labels were paired with mouth forms. Other consonant groups were presented. A bingo game format was used to review consonant labels and mouth forms. An individual check out activity was held to check for 100% accuracy.

The vowel circle was introduced and explained. Students matched the vowel circle with symbols and pictures to check for sound label association. An individual check out activity was again scheduled to look for correct placement of vowels on the vowel mat. Colored squares were used to block the sounds, and students were asked to position the mouth form pictures in the appropriate areas of the circle. Given the sound, the student must be able to supply the label and the area of the circle, and indicate the picture.

The students then began to track speech sounds and used colored blocks to represent speech sounds. Students were then taught to integrate feedback from the eye, ear and mouth to

develop a cross-checking system so that they could verify and self-correct responses. Encoding experiences were given in judging isolated sounds in sequences of two and three sounds. Colored blocks were used for encoding. A check out activity with sequences of isolated sounds was conducted using colored blocks to represent each sequence. Students encoded additions, substitutions, repetitions, omissions, and shifts of sounds within simple syllables (VC, CV, CVC). Chaining activities were used to compare patterns and to perceive how syllables change.

Next came the introduction of complex syllables and coding this structure with pictures and blocks. Patterns were then compared in a chain to identify five auditory contrasts: VCC, CCV, CVCC, CCVC, and CCVCC. Complex syllable chains were encoded using colored blocks. A check out activity was completed individually for chaining of complex syllables. The introduction of wide, finer and finest contrasts were presented. Strategies were overlapped to reading word lists. Student generated chains were used for practice. Students worked on spelling patterns with real and nonsense words.

The action plan was set for 18 weeks, and the strategies were used for 18 weeks, however, the material covered was only up to the plans outlined in weeks 11 and 12 due to student pacing. At the end of the 18 weeks, the posttesting began. The students were all tested individually using form B of the LAC test, and the Kaufman Test of Educational Achievement Subtest Two: Reading Decoding and Subtest Four: Reading Comprehension.

Presentation and Analysis of Results

In order to assess the effects of the A.D.D. program, posttesting was completed using the LAC test and the Kaufman Test of Educational Achievement (Appendix C). The researcher, to document progress, kept a weekly journal (Appendix D), and notes were also taken during oral reading activities.

Posttesting

The comparisons of the pretest and posttest scores are presented in Table 5.

Table 5

Comparisons of Pretest and Posttest Reading Scores

Student	Comprehension	Decoding	LAC test
1	+ 1.4	+ 0.4	2 ~ Adult
2	+ 3.3	+ 1.1	1 ~ 4
3	- 1.8	- 0.6	4 ~ 6
4	- 0.6	+ 0.9	4 ~ 6
5	+ 2.6	+ 0.6	2 ~ 6
6	+ 0.2	+ 0.3	3 ~ Adult
7	+ 1.7	- 1.0	2 ~ 2
8	- 1.0	*	4 ~ 4
9	- 0.8	+ 2.3	4 ~ 6
10	*	+ 0.2	K ~ 3
11	+ 1.0	+ 1.6	2 ~ 5
12	+ 0.9	- 0.7	3 ~ 5
13	+ 2.8	+ 2.1	A ~ A
14	+ 1.1	*	K ~ 3
15	+ 1.8	+ 3.4	2 ~ 6
16	- 0.8	+ 0.5	4 ~ 4
17	- 2.4	+ 2.1	1 ~ 3
18	+ 1.3	+ 2.2	3 ~ 5
19	+ 2.7	- 0.5	4 ~ 3
20	+ 3.5	+ 2.6	5 ~ Adult
21	+ 0.4	- 4.6	2 ~ 5
22	+ 4.7	+ 2.0	1 ~ 2
23	+ 1.2	- 0.2	6 ~ 5

The intervention appears to have had a positive effect on the targeted areas. The largest area of growth in reading comprehension was student 22 with a growth of four years seven months. This student went from a 2.4 grade equivalent to a 7.1. Average growth in reading comprehension overall was 1.0 or one year's growth in 18 weeks of instruction. In the area of decoding, the largest growth was 3.5 for student 15. This student went from a 6.8 to a 10.2 grade equivalent. The average growth in the area of reading decoding was .64 or approximately six and one half-month growth in 18 weeks. The final posttest results are from the LAC test. The

largest area of growth was seen by student 1 with an increase in scores from 64 to 100 or from the second grade level to adult competency. Not only did the students' improve their skills as evident by their test scores, but an unexpected and much welcomed benefit was that their attitudes toward reading also changed over the 18 weeks.

Teacher Notes

It became apparent to the researcher as the weekly journals and teacher notes taken during oral reading were reviewed that some major changes had taken place in the area of students' attitudes toward reading. Students' early successes with the labeling activities built the confidence necessary to challenge and push themselves at each new activity. Many students became excellent peer coaches, preparing each other for check out activities. I observed students giving the same cues and prompts that I used when I taught the skill. The review games and activities worked well to reinforce the skills learned. The expectation of the entire class earning 90-100% accuracy on each part helped students encourage each other and forced others to participate. Students even surprised themselves at how well they were doing using the strategies Slowly but surely more hands were going up to volunteer to read aloud, and students were eager to recite their new found knowledge in front of the class. In areas where students had difficulty, it was interesting to see how self-correction naturally kicked in. When the word lists were introduced, it was amazing to see how quickly some students were able to accurately read the list. Students were asking to read more often during literature time. We read two novels over the 18 week period and the students attitudes about literature were also evident in the teacher notes taken during this time. Student comments included:

Can't we continue reading today.

It's just getting good.

Why can't I read more.

Can't we read for the whole period.

Let's just finish this chapter.

The book is much better than the movie.

The book has many more details, and the images are clearer in my head.

I have never finished a book in my life.

They were developing a real love for the printed word, something that they had never experienced.

In summary, posttesting and teacher notes both indicate that the intervention had a positive effect on the targeted areas, as well as, student attitudes toward reading in general. The conclusions and recommendations follow.

Conclusions and Recommendations

Based on the presentation and analysis of the data on testing, weekly journals and anecdotal notes, the students' showed an improvement in the area of reading and decoding skills, as well as improving their attitudes toward reading in general. The auditory-perceptual skills developed during the learning sessions led to self-correction in reading and spelling. The ability to identify and classify speech sounds beginning with isolated to sequences of sounds was developed. A large part of the growth correlates to the implementation of this program. The time that was set aside, 18 weeks, five days a week, 55 minutes a day, has not been used in the past to focus directly on improving reading. Also, most of the programs that the targeted students have been in previously did not focus directly on the tools necessary to improve the target areas. It is obvious to the researcher that in order for this type of growth to continue the students will need to continue to receive this type of instruction. Lastly, this program could be

implemented when students are beginning to read. If the program was used in the primary or intermediate level, many more students would be successful and competent readers and perhaps even prevent a learning disability in this area.

This intervention will continue to be used with current students as well as with students in the future. Modifications to the program include using the strategy with small groups of no more than five, or work with students one on one. One way to accomplish this would be to work with students during a resource period rather than within the English class. In order to continue to use this within the English class structure; it would be conducive to limit the class size or to teach with an aide trained in the strategy. The aide could do activities with the students' to reinforce skills. One of the weaknesses of the program was the amount of down time with the other students while the researcher worked individually to check for mastery. Students became bored with activities that they worked on during the lag or down time. In the beginning, students who were resistant to the strategies became behavior concerns. Working with smaller groups or individually would avoid these problems. The assistance of a trained classroom instructional aide would also alleviate the problems.

Further consideration should be given to the students that are in the class who do not exhibit problems to the same degree. It should be explored to see if higher functioning students will benefit from this type of instruction, or whether other strategies may be more effective. This would provide an environment for continued growth of the higher functioning students within the program.

The instructor must be well organized and well versed in the intervention in order to be successful. It is extremely time consuming to be properly trained to teach this strategy, but it is well worth the time when the results are examined. When reflecting back at the statistic that

20% of the total population is effected by a reading disability, one can see the impact that this intervention can have. Every child has a right to learn how to read no matter what obstacles life may present, and it is every teacher's responsibility to arm themselves with the tools necessary to accomplish this awesome task. This researchers' experience is proof positive that even the lowest struggling reader can learn and improve their skills.

REFERENCES

Aaron, P. G. (1995). Differential diagnosis of reading disabilities. School Psychology Review, 24(3), 346-360.

Barinaga, M. (1996, August 16). Learning defect identified in brain. Science, 273(5277), 867-868.

Beginning reading and phonological awareness for students with learning disabilities. (1996, Spring). Teaching Exceptional Children,28(3), 78-79.

Carbo, M., Dunn, R. & Dunn, K. (1986). Teaching students to read through their individual learning styles. Englewood Cliffs, NJ: Pentice-Hall Publishing Co.

Cobb, S., Bonds, C., Peach, W. & Kennedy, D.E. (1990, Fall). Effectiveness of phonics for an intensive remedial program. Reading Improvement, 27(3), 218-219.

Curtis, M.E. & Chmelka, M.B.(1994, Winter). Modifying the Laubach way to reading program for use with adolescents with LD. Learning Disabilities Research and Practice, 9(1), 38-43.

Dana, C. (1991, Summer). An alternative approach to phonics instruction. Teaching Exceptional Children, 23(4), 32-37.

Henry, M. K. (1994). Integrating and decoding and spelling instruction for the disabled reader. Reading and Writing Quarterly: Overcoming Learning Difficulties, 10, 143-158.

Idol, L. & Rutledge, M. (1993, Summer). Teaching phonics to poor readers: Direct instruction using sound sheets. Teaching Exceptional Children, 25(4), 58-61.

Illinois Branch of the Orton Dyslexia Society. (1996). Multisensory teaching techniques for language. [Brochure].

Irlen, H. (1991). Reading by the colors: Overcoming dyslexia and other reading disabilities through the Irlen method. Garden Park, NY: Avery Publishing, Inc.

Kaufman, A. S. & Kaufman, N. L. (1985). Kaufman test of educational achievement. Circle Pines, MN: Guidance Service, Inc.

Kopriva, D. (Ed.). (1997). Market facts & Book of lists. The Business Ledger (pp.5, 14, 21). Peoria, IL: P & P Press.

Laubach, F.C., Kirk, E.M., & Laubach, R.S. (1981). Laubach way to reading teacher's manual for skillbook 1. Syracuse, NY: New Readers Press.

Lindamood, C.H. & Lindamood, P.C. (1975). Auditory discrimination in depth. Austin, TX: Pro-Ed, Inc.

Lindamood, C.H. & Lindamood, P.C. (1969). Lindamood auditory conceptualization test. Austin, TX: Pro-Ed, Inc.

Lindamood, C.H. & Lindamood, P.C. (1979). Lindamood auditory conceptualization test-Foreword. Austin, TX: Pro-Ed, Inc.

Nosek, K. (1995). The Dyslexic scholar. Dallas: Taylor.

Orton Dyslexia Society. (1996). What is dyslexia? [Brochure}.

Orton, J. (1966). The Orton-Gillingham approach. In J. Money & G. Schiffman (Eds.), The disabled reader: Education of the dyslexic child (pp. 119-145). Baltimore, MD: The John Hopkins Press.

Paul, T.D. (1996). Patterns of reading practice. Madison, WI: Institute for Academic Excellence.

Richarson, J.S. & Morgan, R.F. (1994). Reading to learn in the content areas. Belmont, CA: Wadsworth Publishing Co.

Roush, W. (1995, March 31). Arguing over why Johnny can't read. Science, 267(5206), 1896-1898.

School District 100. [1996]. Fenton High School Report Card, Bensenville, IL. Author.

Staples, B. (1997, January 13). Betrayed in the classroom. The New York Times, p. A14.

Topping, K.J. (1996). Patterns of reading practice-Foreword. Madison, WI: Institute for Academic Excellence.

Walters, R. (1994, February 28). Parent made herself expert on aid for learning troubles. Business First-Columbus, 10(26), 11.

Wolfe, J.N. (1996). Relations of cognitive functions associated with the frontal lobes and learning disorders in children. Psychological Reports, 79(1), 323-333.

Appendix A
Consent to Participate in Data Collection

August 18, 1997

Dear Parents,

This year in the Resource Edge English class and Resource Reading Class at (*school name*) High School your student has the privilege to participate in an exciting program to improve student reading and decoding skills. The program is Auditory Discrimination in Depth (A.D.D.) and was developed by Charles H. and Patricia C. Lindamood.

I am currently completing my Degree of Arts in Teaching and Leadership through the Saint Xavier University Field Based Masters Program. As part of my program I will be conducting a research project collecting data on the effects of using the A.D.D. program with my students. All information will be strictly confidential. Participation in the data collection is strictly voluntary. Refusal to participate in the data collection will not impact the final course grade. This study will last one semester and the results will be available on request after June 5, 1998.

If you have any questions or concerns feel free to contact me at (630) 860-6268.

Thank-you

Donna O'Dea
Resource Teacher

Please check your response below:

_____ ***Yes***, My student will participate in the data collection for the study.

_____ No, I will not allow my student the opportunity to participate in the data collection for the study.

Student Name _____

Parent/Guardian signature _____

Please have your student return this form promptly to Mrs. O'Dea in the Special Education Office

Appendix B
Pretest Scores

Pretest Reading Scores

Student	Comprehension	Decoding	LAC test
1	7.3	4.7	64
2	7.3	4.8	48
3	5.0	4.2	82
4	6.2	5.0	81
5	5.7	3.8	69
6	3.7	3.9	76
7	5.2	5.6	68
8	5.3	5.9	81
9	6.2	4.6	84
10	1.8	1.6	31
11	2.8	2.0	64
12	4.5	5.3	74
13	3.7	3.0	100
14	5.0	4.6	39
15	3.1	6.8	65
16	7.3	4.1	82
17	7.9	3.1	49
18	6.5	7.5	75
19	3.1	3.0	82
20	4.4	3.9	90
21	8.3	9.2	70
22	2.4	2.0	44
23	4.9	4.8	94

Appendix C
Posttest Scores

Posttest Reading Scores

Student	Comprehension	Decoding	LAC test
1	8.7	5.1	100
2	10.6	5.9	84
3	3.2	3.6	94
4	5.6	5.9	94
5	8.3	4.4	93
6	3.9	4.2	100
7	6.9	4.6	64
8	4.3	5.9	84
9	5.4	6.9	94
10	1.8	1.8	73
11	3.8	3.6	88
12	5.4	4.6	88
13	6.5	5.1	100
14	6.1	4.6	76
15	4.9	10.2	93
16	6.5	4.6	84
17	5.5	5.2	73
18	6.5	9.7	88
19	5.8	2.5	75
20	7.9	6.5	100
21	8.7	4.6	88
22	7.1	4.0	69
23	6.1	4.6	88

Appendix D
Action Research Journal

Week of _____

Action Taken		
Pluses (+)	Minuses (-)	Interesting (?)